

the remains of such a flower form a rather modified branch-system of the already complex inflorescence. On the smallest branchlets the reduction in size of the flowers is so great that the floral organs are not differentiated sufficiently to be recognisable.

R. E. HOLTTUM.

ORCHID NOTES.

A NEW MALAYAN ORCHID,—*DENDROBIUM CITRINO-CASTANEUM*.

This orchid was brought to me by Mr. Poul Feddersen as an epiphyte which he had found near Johore Bahru. It is a typical *Dendrobium* of the section *Sarcopodium*, falling, in Dr. F. Kränzl's arrangement of the species of *Sarcopodium* (Engler's *Pflanzenreich*, IV, 50, II B. 21, p. 321), near to *Dendrobium elongatum*, Lindl., but being quite distinct from it, and not possessing the affinity to the section *Desmotrichum* which that species has. As one of the *Sarcopodiums* with rather numerous flowers, and these prettily coloured, it may not be unworthy of cultivation. The duration of the flowers, however, is unknown to me, and possibly it is a little exacting in the conditions of flowering.

Dendrobium (Sarcopodium) citrino-castaneum. *Planta* epiphytica. *Rhizoma* repens, 5 mm. diametro, ab initio vaginis tubulosis pallide virescentibus obtectum, maturitate atro-castaneum, inter pseudobulbos ad 5 cm. longum. *Pseudobulbi* conoidei, glaberrimi, politi, virides, ad 6 cm. longi, ad 2.5 cm. diametro, ex bracteis initio pallide virescentibus, deinde scariosis et atrocastaneis, maturitate liberati, bifoliati. *Folia* ovato-elliptica, ad 14 cm. longa, ad 3.5 cm. lata, glaberrima sed vix polita, firma, apice rotundata vel obtusa, mucronulata, nervis 20 vel ultra inconspicuis, supra saturate viridia, infra pallidiora. *Corymbus* pluriflorus, conspicuus, floribus 6—10: pedicelli cum ovariis 2-4 cm. longi: bracteae ovato-lineares. *Sepala* citrina: dorsale ad 18 mm. longum, 5 mm. latum, lanceolatum, acutum, 7-nervia: lateralia æquilonga, mentum 6 mm. profundum formantia, ex eodem triangulari-lanceolata, acuta, 6-nervia, nervis 2 supra et nervis 2 infra medium. *Petala* citrina, 16 mm. longa, sepalis paullulo minora, angustiora, concoloria, 5-nervia. *Labellum* ex basi 1.5 mm. lata trilobatum, castaneum; limbus fere planus, crassus, 5 mm. longus: lobus medius exacte linguiformis, crassiusculus, supra sulcatus, 8 mm. longus; lobi laterales oblique oblongi, tenues, apice rotundati atque minutissime denticulati. *Gynostemium* 5 mm. longum.

JOHORE. Prope Johore bahru, *P. Feddersen*.

DENDROBIUM CALLIBOTRYS, Ridl.

From Gunong Pulai in Johore Mr. G. A. Best recently brought into the Botanic Gardens, Singapore, an orchid which on flowering

appears to be *D. callibotrys*, Ridl.: but as it does not agree with the description in some small points, a note on it is in place. Firstly he said that *D. callibotrys* is an orchid of low levels in Singapore island and adjoining Johore territory, so that the finding of it on Gunong Pulai only extends the range in a measure within expectation.

The raceme of this plant of G. Pulai is 5 cm. long and 9-flowered. The bracts are obovate and at flowering reflexed on to the axis: they are large concave and light green. The sepals and petals are light-yellowish green, not white as is said of the type-plant from Singapore. The dorsal sepal is obovate, obtuse, 9 mm. long: the lateral deltoid-falcate as long: the petals broadly lanceolate obtuse a trifle shorter. The lip is 12 mm. long, very markedly three lobed at the middle and at the base of the side lobes has two lateral warts extended back into crests and one median smaller wart, slightly extended back in a crest, and prolonged forward into a low ridge which runs the length of the mid-lobe: the side lobes stand almost as side walls to the entrance of the flower and are flushed from the tip down with salmon-pink: the mid-lobe is a bright lemon yellow with two grooves down it one on each side of the ridge above mentioned: it is directed obliquely downwards. There is honey; and it has a pleasant faint scent.

THE FLOWERING OF *BULBOPHYLLUM PUSTULATUM*, Ridl.

I received recently from Mr. P. Feddersen a plant of this *Bulbophyllum* with two buds upon it; and I interested myself in observing their expansion. The buds arose from the bases of the lowest two leaf-carrying pseudobulbs, and they flowered one day apart, in the order of their position. The opening of the flower commenced in the afternoon. At noon upon the next day these were as drawn, below, that is to say not yet fully expanded.



Half expanded flowers of *Bulbophyllum pustulatum*, $\times \frac{1}{2}$.

Full expansion was attained only upon the morning of the third day, and in the afternoon of the same day they began to wither, unfertilised.

The colour is a rather dark amber with crimson veins inside which show translucently through to the outer side, and with a deep crimson fleshy hinged lip, designed to fall forward when an insect alights upon it, thrusting the insect's head against the stigma and the pollinia for the purpose of pollination. The spurs of the

column are light amber, transparent and very firm. The foot is crimson and carries streaks of nectar. The lip has auricles and is hairy below: above it is slightly pitted marginally and with three shallow impressions as the drawing shows upon its face. The crimson sap does not extend through its flesh.



The lip in its natural position: and on the right the pollen masses.

CYMBIDIUM LANCIFOLIUM Hook. in PENANG.

This widely distributed orchid is rare in the Malay Peninsula; and on that account the discovery of it upon Tiger Hill, Penang, by Dr. J. S. Rose and Mr. Mohamed Haniff, is of interest. The species extends from India to Japan, and southwards to Java. In the Peninsula it has been collected on G. Bujong Malaka in the Main range, and on Bukit Sedanan in Malacca and near Nyalas, which are places between the southern termination of the Range and Mt. Ophir.

COELOGYNE CYMBIDIODES, Ridl.

This orchid was described by Mr. H. N. Ridley (Jour. Linn. Soc. Lond. Bot., xxxviii, p. 329) from dried herbarium specimens collected by Mr. H. C. Robinson upon Gunong Tahan between 3,000 and 6,000 ft. Its flower is figured here from a living plant brought into the Singapore Gardens by Mr. Mohamed Haniff. The colour is cream and chocolate.

It is one of three *Coelogynes* of close affinity: viz. *C. dayana*, Reichb. f., *C. densiflora* Ridl., and this. Of the three the first is the most widely distributed, occurring in the Peninsula and in Borneo: in the Peninsula upon the Taiping Hills and on G. Bubus; on the Main range near the Semangkok pass; on Benom; and again on Mt. Ophir. *C. densiflora* occurs on Bukit Etam, and *C. cymbidioides* on G. Tahan. It is a legitimate view to take that the second and the third are subspecies emerging from the more wide *C. dayana*.

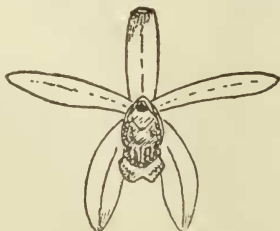


Figure of the flower of *C. cymbidioides*, $\times \frac{1}{2}$

ARACHNIS BREVISCAPA, J. J. Sm.

The two following drawings represent the flower of *Arachnis breviscapa*, J. J. Sm. (*Arachnanthe breviscapa*, J. J. Sm. or

Vandopsis breviscapa, *Schlechter*) an orchid from Sarawak, which flowers in the Botanic Gardens in April. The colour is mustard yellow with umber markings; the lip has umber lines on it and is white at the tip.



Flower of *Arachnis breviscapa*, in face view and in section, $\times \frac{1}{2}$.

ASCOCHILUS HIRSUTUS, Ridl., var *PORPHYROCHLAMYS*.

A pleasing little orchid has recently flowered in the Botanic Gardens, Singapore, which without doubt is to be assigned to *Sarcochilus hirsutus*, Hook. f. (Fl. Brit. Ind., VI, p. 38, and Ann. Roy. Bot. Garden Calcutta, V, p. 44, pl. 67); but having certain peculiarities not found in the type, it is here described as a variety under the name *porphyrochlamys*. Mr. Ridley (Mat. Fl. Malay Peninsula, Monocotyledons, I, p. 179) transferred *Sarcochilus hirsutus* to the genus *Ascochilus* as *A. hirsutus*.

The plant which flowered in Singapore is of uncertain origin.

Its stems ascend obliquely and the solitary inflorescences arise from the axils of lower leaves about to die, standing nearly horizontally, and bearing the flowers in a corymb facing forwards. This means that the twist upon the ovary and pedicel varies in the different flowers. The flowers produced were up to 10 in number, pleasantly fragrant and lasted about four days. They expanded widely as here drawn.



Expanded flower of *Ascochilus hirsutus*, nat size.

The details of the flower are not exactly as in Sir Joseph Hooker's description and drawings; but then he apologises for his work in the following words "Described from the drawing and a very few detached flowers in a very bad state, contained in an attached pocket. The analysis of the lip of the latter was most

difficult and, though conducted with extreme care, I cannot vouch for its perfect accuracy." According to Sir Joseph Hooker's descriptions, the type and this variety differ in the following points:—

TYPE.

Leaves apparently flaccid and probably drooping

Peduncles green suberect

Flowers 2/3 in.

Dorsal sepal apiculate

Lip...claw dilating into a cup-like spur:

side-lobes or arms of the hypochil wing-like:

point of spur drawn as elongated.

VAR PORPHYROCHLAMYS.

Leaves firm and horizontal on either side of the obliquely ascending stem

Peduncles purple horizontal

Flowers 1 inch

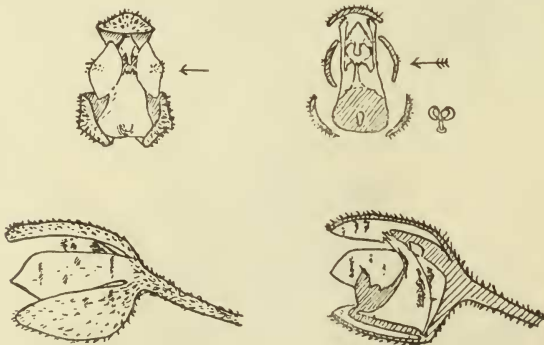
Dorsal sepal obtuse

Lip...claw not dilated into a cup-like spur:

side-lobes narrow falcate, even-edged to the toothed apex:

point of spur very short.

The drawings to which Sir Joseph Hooker referred are those of Kunstler, whose locality is given loosely as "Perak." In the Singapore Herbarium is a drawing of the species made by C. Curtis and localised as from Telok Anson "came with *Phalaenopsis violacea*." It seems that the plant flowered in the Waterfall Gardens. From this source came Mr. Ridley's description in his Materials. The drawing represents the spur at the apex of the labellum as elongated somewhat; and in this respect the plant is as Kunstler's and not as in the var. *porphyrochlamys*. Mr. Curtis represents the hairs on the outside of the flower as reddish purple.



Flower of *Ascochilus hirsutus* expanding.

The same in section; the arrow points to frilled edge of the callus.

Flower of *Ascochilus hirsutus* from the side before expansion.

The same in section.

A NEW ORCHID—*SACCOLABIUM CRUCICALLUS*.

Saccolabium crucicallus is a species brought by Mr. Mahomed Haniff into the Waterfall Gardens, Penang, from Pungah in Lower Siam. It belongs to the section Teretifoliae and suggests the Perak *S. Kunstleri*, Ridl., but in flower is manifestly distinct. It suggests also *S. luisifolium*, Ridl. from Lower Siam.

Saccolabium crucicallus. *Planta* epiphytica. *Caulis* elongatus, pensilis, viridi-purpurascens, 5 mm. crassus, internodiis c. 2 cm. longis. *Folia* teretia, ut cauli 5 mm. crassa, aliquo modo recurvata, minopere versus apicem obtusum contracta, viridia vel purpurascens. ad 14 cm. longa. *Racemi* ex caule ad latera foliorum enascentes, a caule basi divergentes deinde deflexi versus terram prorsi, ad 15 cm. longi, 25-flori; axis angulatus: pedicelli cum ovariis horizontales, lutescentes. *Sepala* purpureo-brunnea, obtusissima, 4 mm. longa, 2 mm. lata, dorsale quadrato-ovatum; lateralia oblique quadrato-ovata. *Petala* sepalis concoloria, linear-acuta, 3 mm. longa, 1 mm. lata explanata. *Labellum* cremeum nisi in lobis basalibus ubi luteum; lobi basales rotundati, omnino inflexi; lobi apicales ovati carnosiusculi ad medium inflexi; lobus medius in parte apicali horizontalis, latissime ovatus, obtusus: calcar ob callo cruciformi in ore fere clausum, intra dorso cristatum, lateribus crassum, mellifer, callo in ramo infimo paullulu hirsuto. *Gynostemium* anguste cithariforme, luteum.

Floret mense Septembris in Horto Botanico Penangensi: habitat in collibus prope Pungah, Siam inferioris, *Mohamed Haniff*.



Flower of *Saccolabium crucicallus*, x 2, and the cross shaped callus still more enlarged. W. is the wall of the spur and the arrow indicates the approach to the honey.

Stems more or less pendulous green, but developing a purplish pigment on the exposed side which confused in the eye with the green looks purplish brown, about 5 mm. thick. Leaves about 2 cm. apart, up to 14 cm. long terete as thick as the stem, recurved slightly, in a very slight degree tapered just below the blunt apex, with a little of the purple pigment in them where exposed. Raceme from the side of the leaf, about 15 cm. long and 25-flowered, directed earthwards except in the first few cm. which carry it out from the stem, angled. Pedicels and ovary (at flowering indistinguishable) about 1 cm. long at right angles to the axis yellowish with a few minute purplish markings.

Sepals purplish brown squarely ovate, except for a very slight obliquity in the lateral sepals all three equal, very blunt 4 mm.

long by 2 mm. wide. Lateral petals of the same colour as the sepals linear acute 3 mm. long by 1 mm. wide, standing in the same plane as the sepals *i.e.* at right angle to the ovary. Labellum cream-coloured with bright yellow on the lower of the two pairs of lateral lobes, with a blunt spur 2 mm. long and very faintly bilobed this spur nearly parallel to the ovary and so horizontal. Side lobes bifid, the upper of the two divisions thin circular bent in over the entrances to the spur: the lower of the two pairs ovate slightly fleshy and at first directed forward, but then equally bent in: the mid lobe directed forward very broadly ovate oblate obtuse: interior of the spur with from above a cross-shaped callus hollowed between the points and just hairy upon the lowest point, and from below a curved ridge which impinges upon the back of the callus, while the wall of the spur thickened at either side (W in figure) closes any approach to the honey under the callus. The approach to the abundant honey is thus over the lateral arms of the cross and therefore above the lateral lobes of the lip. An arrow indicates it.

Column yellow slightly fiddleshaped presenting a very slightly hollowed face forwards.

I. H. BURKILL.

HAPLOCHOREMA SUMATRANUM.

The late Dr. Karl Schumann defined in 1899 a genus *Haplochorema*, with then four species from Borneo, to which he added two more from the same island in 1900. He remarked that its affinity was close with *Kaempferia*, but that by having an unilocular ovary, it appeared sharply distinguished from this and from all other genera of the Zingiberaceae to which it belongs. If the character drawn from the ovary holds good then a Sumatran plant now in cultivation in the Botanic Gardens, Singapore, is also a *Haplochorema*: but it suggests *Gastrochilus* more than *Kaempferia*. The ovary of all the species in these three genera should be examined afresh to decide how they differ and are to be distinguished.

Dr. T. Valeton has already questioned the soundness of Karl Schumann's judgment in regard to an unicellular ovary in a few Zingiberaceae marking them off as a genus, and in the *Bulletin du Jardin Botanique de Buitenzorg*, series 2, No. 27, 1918, p. 115, has reminded us that *Curcuma Kunstleri*, Baker, may possess one as an abnormality.

The following is a description of this new *Haplochorema*.

Haplochorema sumatranum. *Herba* pedalis et ultra, sylvicola. *Rhizoma* breve. *Folia* disticha, 2—4 supra vaginas duas: petiolus ad 12 cm. longus, in dimidio inferiore vaginatus. vaginorum apicibus lanceolatis mox emortuis: lamina late elliptica, apice et basi acuta, araneoso-hirsuta, ad 30 cm. longa, ad 15 cm. lata. *Racemus* 3—5-florus: flores invicem exserti singuli, bracteis